

REMARKS

As a preliminary matter, the office action summary for the office action mailed October 20, 2003 (Paper No. 8), has items 13 and 13.C of the summary checked, but none of items 13.C.1, 2 or 3 are checked. Thus, it is unclear what is intended. (See also the summary for the office action mailed April 9, 2003 (Paper No. 6) for a similar but more complete indication.) As Applicants stated in their Amendment A dated July 9, 2003, the present application is actually a continuation of a PCT International Application designating the United States, and the application claims priority under 35 U.S.C. § 120 and 35 U.S.C. § 363, *not* under 35 U.S.C. §§ 119(a)-(d) or (f). Applicants respectfully request that the Examiner acknowledge entry of their Preliminary Amendment of August 31, 2001 (copy enclosed) requesting insertion of this statement in the specification: "This is a continuation of International Application No. PCT/JP99/03363, filed June 24, 1999." Applicants further respectfully request that the Examiner notify the Applicants which additional documents, if any, are required to obtain acknowledgement of the Applicants' claim for priority, or acknowledge the claim and indicate that no additional documents are needed.

Claims 1, 2, 5 and 6 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Lin et al, JP 04-319526 ("Lin"), or Ishikawa et al, JP 09-052707 ("Ishikawa"), in view of either Kazufumi et al., JP 01-296429 ("Kazufumi"), or Ueda et al., JP 04-214221 ("Ueda"). Applicants make no amendments of claims 1, 2, 5 and 6 and respectfully traverse the rejections because neither Lin nor Ishikawa disclose or suggest the washing process recited in claim 1, and neither Kazufumi nor Ueda disclose or suggest repeating the processes recited in claims 1 and 5. The Examiner, while continuing to rely on Lin, Ishikawa, Kazufumi and Ueda, has not provided citations to specific features of those teachings to rebut the Applicants' arguments or to support his own positions. Further, the Examiner relies on insufficiently supported official notice and impermissible hindsight.

The Examiner now takes the position that Lin and Ishikawa, among other unspecified references, disclose "the process step of washing in a solvent to remove unreacted molecules and unbonded reaction products of a UV radiation process step" (Paper No. 8, p. 2, ¶ 3). In their previous amendment, Applicants stated that Lin and Ishikawa do

not appear to disclose the claimed washing process and respectfully request that the Examiner indicate specifically the disclosures in Lin and Ishikawa to which he refers.

The Examiner goes on to state that Kazufumi and Ueda disclose “a recognition in the art that it is beneficial to provide several monolayers of bonded lubricant to a protective layer in order to increase durability by forming a defined three dimensional structure,” that that disclosed recognition was “ample motivation to repeat the process” claimed by Applicants, and that “a process of forming several monolayers was known in the art at the time of the invention” (Paper No. 8, pp. 2-3, ¶ 3). Neither Kazufumi nor Ueda disclose or suggest the washing process recited in Applicants’ claim 1 or the increase of a ratio of the thickness of connected lubricant to the thickness of weakly connected lubricant recited in new claims 11 and 12. Knowledge in the art of forming several monolayers, and the mere suggestion that several monolayers of bonded lubricant increase durability does not disclose or suggest Applicants’ claimed way of achieving such an increased ratio.

The Examiner now newly states that Kazufumi provides a motivation for “wash[ing] away unbonded lubricant since it would disturb a three dimensional orderly structure” (Paper No. 8, p. 3, ¶ 3), also newly citing Ogawa in support of this motivation. Applicants respectfully request that the Examiner cite the specific disclosure of Kazufumi to which he refers.

As for Ogawa, Ogawa does not disclose or suggest immersion of a magnetic recording medium in a solvent for lubricant not connected to the protective layer, as recited by Applicants in claim 1 and in new claim 12. There is no disclosure or suggestion in Ogawa of the use of the THF solution of diborane as a solvent of unreacted lubricants. Rather, the immersion results in the adding of OH groups. (See Ogawa, col. 3, line 63 – col. 4, line 18.)

Further, the Examiner cites specific items of prior art for features apparently based on official notice in the previous office action. Applicants respectfully submit that neither Afzali-Ardakani et al., U.S. Patent No. 4,446,193 (“Afzali-Ardakani”), Ogawa, U.S. Pat. No. 4,761,316 (“Ozawa”), nor Shirahata et al., U.S. Pat. No. 4,087,582 (“Shirahata”), alone or taken together, disclose or suggest the invention as recited in claims 1 and 5.

Afzali-Ardakani does not teach or suggest a repetition of the process it discloses. Afzali-Ardakani discloses that “an additional layer of lubricant may be added on top of the chemically bonded layer of lubricant. Due to molecular attraction between the two layers of lubricant which have similar structures, the top layer tends to be held in place. . . .” See Afzali-Ardakani, col. 2, lines 50-55. If the processes of Afzali-Ardakani were repeated, the additional lubricant layer would be held in place by chemical bonding, not molecular attraction between layers of similar structure (see Afzali-Ardakani, col. 2, lines 18-22).

Applicants have already argued that Ogawa does not disclose or suggest immersion in a solvent (see above). Ogawa also does not disclose or suggest “a subsequent ultraviolet rays treatment process which connects a portion of said lubricant to said protection layer,” or the repetition of that process, as recited in claims 1 and 5. Ogawa discloses that “an energy beam 24 . . . such as electron beam, X-ray, γ -ray, ultra violet ray, ion beam, etc. is irradiated on the surface of the protection film 16 so that the vinyl groups 22 are bridged . . . to one another, and the monomolecular protection film 16 is reinforced and stabilized.” See Ogawa, col. 3, lines 46-51. Thus, the irradiation disclosed by Ogawa does not have the effect claimed by Applicants. Moreover, the irradiation of Ogawa does not appear to be repeated in the process described at Ogawa, col. 3, line 61- col. 4, line 20, discussed above, because the vinyl group bridging is depicted in FIG. 3 of Ogawa only on top of the protective film, and is not repeated in FIGS. 4-6 in each layer of the protective film.

Shirahata discloses forming a monomolecular layer of a fatty acid or a metal salt thereof on a ferromagnetic metal film and repetition of the disclosed process to form a plurality of layers. The Examiner also cites Schmidt, U.S. Pat. No. 5,120,603 (“Schmidt”), as disclosing a process of forming several monolayers irradiated with UV. Neither Shirahata nor Schmidt disclose or suggest the UV treatment or its repetition as recited in Applicants’ claims 1 and 5, or the washing step or its repetition as recited in claim 1. The irradiation of Schmidt does not disclose or suggest the Applicants’ claimed “subsequent ultraviolet rays treatment process which connects a portion of said lubricant to said protection layer.” Schmidt’s irradiation is bond-breaking ionizing radiation for modification of film properties, and radiation to encourage formation of intermolecular cross-links within a film, not between

a lubricant layer and a protection layer as claimed (see Schmidt, col. 4, lines 57-62; col. 5, lines 25-30; and FIG. 2).


Thus, the prior art cited by the Examiner does not disclose or suggest the claimed features, assertion of which was previously made by official notice. Applicants respectfully submit that the Examiner's original reliance on official notice for features beyond those asserted to be disclosed or suggested in the bases for the § 103(a) rejections remains unsupported.

None of the prior art cited discloses or suggests all of the features of Applicants' independent claims 1 and 5. Where the cited prior art actually discloses a specific claimed feature or features, the Examiner cites no motivation to combine these disclosures to arrive at the specific steps in the specific order, or the repetition of those steps, recited in Applicants' claims 1 and 5. The Examiner continues to rely on prior art that neither teaches nor suggests claimed features, unsupported official notice and impermissible hindsight to reject the claimed invention as unpatentable over the prior art.

Thus, Applicants respectfully request that the Examiner reconsider and withdraw the rejections to independent claims 1 and 5 and to all claims dependent from them.

For at least the foregoing reasons, Applicants believe that this case is in condition for allowance, which is respectfully requested. The Examiner should call Applicants' attorney if an interview would expedite prosecution.

Respectfully submitted,
GREER, BURNS & CRAIN, LTD.

By 
Arik B. Ranson
Registration No. 43,874

January 20, 2004

300 S. Wacker Drive, Suite 2500
Chicago, Illinois 60606-6501
Telephone: (312) 360-0080
Facsimile: (312) 360-9315
Customer No. 24978